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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,599	09/25/2003	Satoru Yamaguchi	461-147	1316
23117	7590	12/05/2005		
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER RAO, G NAGESH	
			ART UNIT	PAPER NUMBER
			1722	
DATE MAILED: 12/05/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/669,599

Applicant(s)

YAMAGUCHI ET AL.

Examiner

G. Nagesh Rao

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15, 16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- 1) Claims 1-13, 15-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolossow (US Patent No. 6,074,084) taken together with Murata (US Patent No. 5,393,213) in further view of Capelle (US Patent No. 5,127,741).

Kolossow 084 has incorporated by reference the teachings of Murata (US Patent No. 5,393,213), which teaches the embodiment of a screw extruder coupled with a molding die (See Figure 4 and 21 Element 14).

Kolosow 084 depicts a screw extruder (See Figure 1) that would be capable of kneading and guiding a ceramic material toward a molding die (Examiner reiterates that language pertaining to the specificity of ceramic material by applicant is viewed as recitation of intended use and bears no weight to the structural limitations of the claimed apparatus), wherein the screw extruder has various segments whereby section V of the extruder is capable of pressing the material, section VII is capable of spreading the material, and section VIII is capable of diffusioning the material. Furthermore the pressing section (V) of the screw extruder is located on a first shaft body and the diffusion section (VIII) of the screw extruder is located on a second shaft body which is coaxial to first shaft body and also has a diameter larger than that of the aforementioned. Lastly both portions of the screw extruder have at least one thread in the form of a spiral ridge on the outer peripheral surface of their respective portion of the shaft body (See Figure 1, Col 8 Lines 30-67, Col 9 Lines 1-64, and Col 13 Lines 1-67).

Furthermore Kolosow 084 teaches a section of the screw extruder apparatus (VII) which is capable of spreading the material in a radially outward direction as it is between sections V and VIII, and is located on an intermediate shaft body that increases in diameter towards the section VIII. Whereby diameter of section VIII of the screw extruder will decrease at its tip point.

Also Kolossow 084 teaches a housing unit for the screw extruder (See Figure 1 for more details), where the screw extruder capable of pressing material (V) is accommodated in a screw housing which has a hollow small diameter tube of substantially circular cross section, and the portion of the screw extruder capable of spreading (VII) and diffusion (VIII) are accommodated in a screw housing which has a hollow large diameter tube of substantially circular cross section, whereby the inner peripheral surface of the small hollow tube and large hollow tube are connected to one another, and that the portion of the screw extruder capable of spreading (VII) rotates while it maintains a distance from the interior wall in the radial direction. Furthermore the extruder is capable of having an even or odd number of threads and as well differentiations in their length size since those distinctions are viewed as design choices as well as result effectant variables that would be obvious to modify allowing for varying conditions to obtain the molded product in a particular form or style. Finally the extruder taught in Kolossow 084 has the lead wherein its diameter is substantially constant along said diffusion screw part (See Figure 1 Section VIII).

From the aforementioned the extruder of Kolossow 084 lacked the specified teachings of an extruder die being used with the extruder. However there being a strong motivation to combine the teachings of Kolossow 084 and Murata 213, due

to Kolossow 084's claiming of incorporating the teachings of Murata 213, that it would be obvious to couple the screw extruder taught by Kolossow 084 with the molding die of Murata 213, since it is very well known in the art to have screw extruders coupled with molding dies to produce desired molded products.

The hypothetical device resulting from the combination of Kolossow 084 and Murata 213 fail to teach that the second shaft body of the diffusion screw part has, at least at its downstream end in the axial direction, a diameter reducing part whose diameter is reduced toward its front end, said second lead extending along said diameter reducing part.

In an apparatus pertaining to high performance extruders Capelle 741 depicts in its only drawing, an extruder where the front portion reading on as the second shaft portion of the body has a screw portion in section 8 increasing in size from section 7 and then thereafter reducing towards its front end in section 10 after section 8's increase.

At the time of the invention it would have been obvious to one with ordinary skill in the art to modify the teachings of Kolossow 084 and Murata 213 with that of Capelle 741, because as described by Capelle 741 this particular design allows for better mixing and homogenizing results as the material goes upstream before extruded out downstream in its final form (Col 2 Lines 40-62).

*Conclusion*

2) Applicant's arguments filed 11/17/05 have been fully considered but they are not persuasive. The argument that Kolossow 084 pertains to plastics is moot, because the apparatus is more than capable of handling ceramic materials. Secondly the function of Kolossow 084's apparatus is capable of meeting prescribed functions of applicant's claimed invention and that how that piece of device works is a mere recitation of intended use and does not disqualify the fact that the apparatus structurally meets the limitations of claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,


will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GNR

  
ROBERT DAVIS  
PRIMARY EXAMINER  
GROUP 1300

120  
11/30/08